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## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>7</sup> : C12N 15/54, 15/82, 9/10, C12Q 1/02, 1/48, 1/68		A3	(11) International Publication Number: <b>WO 00/32791</b>
			(43) International Publication Date: 8 June 2000 (08.06.00)
(21) International Application Number: PCT/US99/28586		(81) Designated States: AE, AL, AU, BA, BB, BG, BR, CA, CN, CR, CU, CZ, DM, EE, GD, GE, HR, HU, ID, IL, IN, IS, JP, KP, KR, LC, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, SG, SI, SK, SL, TR, TT, UA, US, UZ, VN, YU, ZA, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).	
(22) International Filing Date: 2 December 1999 (02.12.99)			
(30) Priority Data: 60/110,782 3 December 1998 (03.12.98) US			
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(54) Title: PLAN LECITHIN:CHOLESTEROL ACYLTRANSFERASES

## (57) Abstract

This invention relates to an isolated nucleic acid fragment encoding a plant lecithin:cholesterol acyltransferases. The invention also relates to the construction of a chimeric gene encoding all or a portion of the plant lecithin:cholesterol acyltransferases, in sense or antisense orientation, wherein expression of the chimeric gene results in production of altered levels of the plant lecithin:cholesterol acyltransferases in a transformed host cell.

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Arabidopsis (gi 3935185) MKK-----1-SSHSYVVJAILVVVHTSMQAVGSH-----VYPL1LVPNGGNGOLEVR
corn_ (SEQ ID NO:2) HAR-1POVLAPL1LL1LLPAGLR--ELMI DRRPLPKRCREVLHPLVPLGTCSELDAR
corn_ (SEQ ID NO:4) MVHDMAS-----CSRGGTIVLSKFASTTRAPKO-----LPPVVVVPGYATNELDAR
corn_ (SEQ ID NO:6) NASSLLQQLLS1LL1LLPSPLRLREHLSGNHVASAN-----NFHPI FLVAGVSCSDEAR
soybean_ (SEQ ID NO:8) MKKEQEGEL-KIEVATLTVTVVVWVLSLLCTCGASH-----LDPL1L1PGNGNGOLEAR

Arabidopsis (gi 3935185) LDREYKPSVMSVCSWLYPIHKKSGGWFRLWFDAAVLSPT-RCFSDRMHLYDPDLDY
corn_ (SEQ ID NO:2) L7DAYRPFRAACDE-----GGLVRLWNTNCSDLPAHVVRCFNEQMAHYDPVANDY
corn_ (SEQ ID NO:4) LTELHPSSPRCA-----HKGKGFRLYLNTALEDAADVRCFAEQMATYDAASDDY
corn_ (SEQ ID NO:6) LTEYRPSVPHCGA-----MKGKGFRLWKNSSSELLSRDYVOCFEEQMSLVDPATNEY
soybean_ (SEQ ID NO:8) L7NOYKPSFTI CESN-YPLIKKNGWFRLWFDSSVILAPIT-OCTAERMTLHYNOLEDY

Arabidopsis (gi 3935185) ONAPGVQTRVPHGTSTKSL1LYLDFLRDATSYMEHLVKALEKCKGVNDOTIL
corn_ (SEQ ID NO:2) RNLPGVETRVNFGSGRGF-DKNPEMTTWSNCFVLNELLARA-GYRGGDTLF
corn_ (SEQ ID NO:4) RNAQGVETRVVFFGSTRAFRYPDPRNF-SYMDKTVSRLERL-AYRGGDNLF
corn_ (SEQ ID NO:6) RNLAGVETRVNFGSTRAFSHKNPLKSD--WCLGKLRAALEDH-GYRGGDTMF
soybean_ (SEQ ID NO:8) FNTPGVETRVVPHGTSTNLLYLNFRLKHITGYNAPLVDSLQKL-GYADGETLF

Arabidopsis (gi 3935185) GLAASGHPSRVASQFLDLKQLEKTSSENEGKPVILS L7VFLNLTNRTPSWR
corn_ (SEQ ID NO:2) APPVPGPSSRS SPATSVGWPSLVEDASRKNRGRKVLFG MVALEFVRS1PHAMR
corn_ (SEQ ID NO:4) AVAPPGHPSRVADAFGLRLRLVERASRANGGGPVTVIA TVAHGFLRLRPLPWR
corn_ (SEQ ID NO:6) APPSPGQTSSEVYSRYFKELMLVEAASERTN-KKAVILG MVALEFVRS1PPAMR
soybean_ (SEQ ID NO:8) GLAAEGHPSQVGSFKLKDNLLEASNSNNGKPVILS L7VQLQLNRNPPSWR

Arabidopsis (gi 3935185) RYKIKHFLVALAAPN--GGTISOMKTFASGNTLG-VPLVNL1--LVRKHORTSESNHLLPS
corn_ (SEQ ID NO:2) DRYIKHLFLVAPFAEGFVKLQYFVSGSNLMYVPTVSSLEPATRPMWRTFESSLVNFP
corn_ (SEQ ID NO:4) RRVRFRFVFAAPN--GGVVLGHLTI VAGNHLG-LPFDVPL--ALNGEYRSLOSSLWPLFN
corn_ (SEQ ID NO:6) RENIERLVVAPTLPGGFLEPVNFTASGTDILYVPTATPLAT--RAMWRSFESAJVNFP
soybean_ (SEQ ID NO:8) KKF1KHFIASAPN--GGAIDENYTFASGNTLG-VPLVNL1--LVRDEORSSESNHLLFN
Arabidopsis (gi 3935185) TKVFNDRTKPLVTPOVNYTA--YEMDRFADIGFSGOVVPYKTRVLPTEELMTGVPV
corn_ (SEQ ID NO:2) PAVTGR--RPLVVTARRNYTA--YDLEDL1VAVGYGAGVEPFRRAVPMKSYQAPMVPT
corn_ (SEQ ID NO:4) PAVTGR--RPLVVTARRNYTA--YDLEDL1VAVGYGAGVEPFRRAVPMKSYQAPMVPT
corn_ (SEQ ID NO:6) PAVTGR--RPLVVTARRNYTA--YDLEDL1VAVGYGAGVEPFRRAVPMKSYQAPMVPT
soybean_ (SEQ ID NO:8) PAVTGR--RPLVVTARRNYTA--YDLEDL1VAVGYGAGVEPFRRAVPMKSYQAPMVPT

Arabidopsis (gi 3935185) TC1Y KQPEIK- ASLAAL-----KVDS-LN
corn_ (SEQ ID NO:2) TC1N ATPE1V- VSHLAFDEKMRROPEQNKVYK
corn_ (SEQ ID NO:4) ACVV VTPMHV- VSL1ADVP-AMRLPTA-Y-FR
corn_ (SEQ ID NO:6) TY1S AAPEVAA 13VLA1TEKMRROPEQNKVYK
soybean_ (SEQ ID NO:8) TC1M ERPE1S- VSL1ALQS-LWKEKNOY-LK

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